WATER QUALITY REPORT

City Utilities of Springfield, Missouri

Public Water System ID Number: MO5010754

2020

City Utilities
Connecting Our Community

TABLE OF CONTENTS

*This report contains important information about Springfield's drinking water. For more information regarding this assessment or for additional water quality data, call the City Utilities Manager-Water Quality Lab at **417-831-8822**.*

For the 21st year in a row, City Utilities of Springfield's Blackman and Fulbright Water Treatment Plants have received the Director's Award from the Partnership for Safe Water, a program of the American Water Works Association (AWWA). This award is given in recognition of the efforts to achieve excellence in water quality far beyond what is required by federal regulations. Less than one percent of the treatment plants in the United States have received this recognition.

Water is important for all life. While City Utilities provides water, natural gas, electricity, transit, and broadband services to the City of Springfield–water is the only commodity that our customers ingest. Providing safe drinking water is not an option but is a necessity to keep our community healthy.

City Utilities' commitment to you, our neighbor, is that our team will continue to work hard every day to ensure you not only have safe drinking water, but great tasting water, too.

ATTENTION Landlords and Apartment Owners: Please share a copy of this report with your tenants about the quality of their drinking water.

ABOUT SPRINGFIELD'S WATER SYSTEM

- **28.34** million gallons of water is supplied to City Utilities' customers per day on average
- **11.56** billion gallons of combined lake capacity between McDaniel and Fellows Lakes
- **1,265** miles of water distribution mains
- **8,411** fire hydrants

SOURCE

City Utilities surface water sources hold over 11 billion gallons of water.

TREATMENT

City Utilities treated over 10 billion gallons of water for its customers in 2020.

QUALITY

City Utilities' Water Quality Lab regularly tests your drinking water to ensure its safety.

CONSTRUCTION/ INFRASTRUCTURE

City Utilities' goal for 2021 is to replace 9 miles of water line to improve system reliability.

DISTRIBUTION

83,337 customers enjoy City Utilities' drinking water in their homes and businesses.

WHERE YOUR WATER COMES FROM

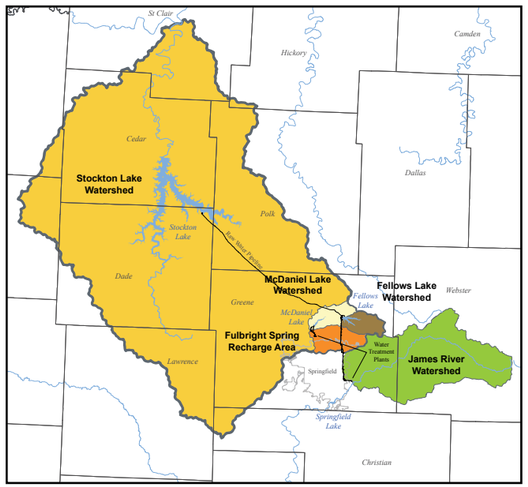
City Utilities' drinking water comes from a variety of lakes, rivers, wells, and a spring. Approximately 74 percent of Springfield's drinking water comes from surface waters, such as lakes and rivers. The remaining comes from groundwater wells and a spring.

City Utilities' Fulbright and Blackman Water Treatment Plants use a combination of sources for water treatment, including both surface and groundwater. Fulbright is located on the northern edge of Springfield and is served by Fulbright Spring (the original source for the city), a deep well, and McDaniel Lake. The Blackman Plant is in the southeastern corner of the city and receives water from Fellows Lake and the James River. Both Fellows and McDaniel Lakes can be supplemented with water from Stockton Lake. Another deep well can be found in the distribution system and is used as an additional source when needed.

ABOUT OUR WATERSHED

Springfield is fortunate to have a variety of natural resources available to supply our community's drinking water. Springfield's water sources are unique compared to other communities in southwest Missouri. While other towns and rural residents rely on groundwater wells, customers of City Utilities have an abundance of surface water sources.

- The wells in Springfield come from the aquifer which are replenished by precipitation soaking into the ground. Healthy soils increase the quality and quantity of water that recharges the aquifer.
- The "riparian area" is the land along streams and rivers. Forested riparian areas are one of the best ways to prevent flood damage, erosion, and nutrient pollution to our drinking water.
- Prescribed or rotational grazing practices help improve soil health and water quality, while over-grazed pastures do the opposite.
- Nutrients from fertilizer, animal or human waste, and sediment from erosion can cause algae blooms in our drinking water reservoirs which can negatively impact our water supply.
- The cleaner our sources of drinking water, the better it will taste and smell, less it will cost, and more affordable it will be for the consumers.



SOURCE WATER ASSESSMENT

The Department of Natural Resources completed a source water assessment for City Utilities' drinking water sources. The assessment showed that, as expected for surface waters, the sources are susceptible to viruses and microbiological contaminants, which are inactivated by conventional treatment. In addition, all surface waters are moderately susceptible to land-use activities within the watershed. City Utilities, in support of the Watershed Committee of the Ozarks, will continue to encourage low-impact land use to reduce detrimental effects to our drinking water sources. The source water assessment for our system can be found online at http://drinkingwater.missouri.edu. City Utilities Public Water System number is 5010754.

IMPORTANT DRINKING WATER DEFINITIONS

90th percentile: For lead and copper testing. 10% of test results are above this level and 90% are below this level.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers requirements which a water system must follow.

HAA5: Haloacetic acids (mono-, di-, and tri-chloroacetic acid, and mono- and di-bromoacetic acid) as a group.

Locational Running Annual Average (LRAA): The average of samples collected at a particular location, calculated from the most recent 4 quarters.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of disinfectant use to control microbial contamination.

Nephelometric Turbidity Units (NTU): A measure of cloudiness of the water

Population: 170,554. This is the equivalent residential population served including non-bill paying customers.

Range of Results: Shows the lowest and highest levels found during a testing period. If only one sample was taken, then this number equals the highest test result or highest value.

Running Annual Average (RAA): The average of sample analytical results for samples taken during the previous four calendar quarters.

Total Trihalomethanes (TTHM): Total trihalomethanes (chloroform, bromodichloromethane, dibromochloromethane, and bromoform) as a group.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: A measure of the cloudiness or clarity of water. It is monitored because it is a good indicator of both water quality and the effectiveness of our filtration system.

UNIT DESCRIPTIONS AND DEFINITIONS

Grains Per Gallon (GPG):
measure of hardness 1 GPG = 17.1 ppm

Parts Per Million (ppm):
or milligrams per liter (mg/L)

Parts Per Billion (ppb):
or micrograms per liter (ug/L)

N/A:
not applicable

MEASUREMENTS

Parts Per Million
1 drop in a 10-gallon fish tank

Parts Per Billion
1 drop in a 10,000-gallon swimming pool

CITY UTILITIES OF SPRINGFIELD - WATER QUALITY SUMMARY 2020

Detected Contaminants		MCLG	MCL	Average Level	Range Detected	Compliance	Major Sources
Treatment Plants							
Fluoride	ppm	4	4	0.69	0.1 - 1.13	YES	Added during treatment for dental health or dissolved from natural deposits
Total Chlorine	ppm	4 (MRDLG)	4 (MRDL)	1.25	0.96 - 1.77	YES	Water additive used for disinfection
Barium	ppm	2	2	0.0614	0.0392 - 0.0789	YES	Discharge of drilling wastes or from metal refineries; erosion of natural deposits
Nitrate	ppm	10	10	1.43	< 0.5 - 2.02	YES	Runoff from fertilizer; leaching from septic tanks or sewage; erosion of natural deposits
Nitrite	ppm	1	1	< 0.06	< 0.06	YES	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Total Organic Carbon	ppm	N/A	N/A	1.35	0.5 - 2.70	YES	Naturally occurring
Turbidity	NTU	N/A	TT: at least 95% of samples < 0.3 NTU	Highest Single Measurement = 0.08 Percentage of samples < 0.3 NTU = 100% Fully Compliant - all 12 months		YES	Soil runoff

Detected Contaminants		MCLG	MCL	Highest LRAA	Range Detected	Compliance	Major Sources
Distribution System							
Total Trihalomethanes	ppb	N/A	80 (LRAA)	47.0	12.4 - 57.5	YES	By-product of drinking water disinfection
Haloacetic Acids	ppb	N/A	60 (LRAA)	34.0	11.5 - 48.8	YES	By-product of drinking water disinfection
Lead	ppb	0	AL = 15	**2019** Testing Results** 90th Percentile Values 8.2	Range Detected < 1.0 - 21.0	YES	Corrosion of household plumbing; erosion of natural deposits
Copper	ppm	1.3	AL = 1.3	0.094	0.011 - 0.26	YES	Corrosion of household plumbing; erosion of natural deposits
Total Coliform Bacteria	% positive samples	0	coliform bacteria in no more than 5% of samples	**2020 testing - highest monthly % positive** 0.72% Jan		YES	Naturally present in the environment - **No fecal coliform or E. coli in 1,602 tests in 2020**
Additional Monitoring Data (General Water Quality Parameters)							
Analyte	**Units**		**Average**	**Range**	**Comments**		**Major Sources**
Hardness	GPG ppm		10 167.1	5.42 - 13.2 92.6 - 226.2	Hardness refers to the mineral content of water. Calcium and magnesium are the main contributors to water hardness.		Erosion of natural deposits

Violations and Health Effects Information

During the 2020 calendar year, we had the below noted violation(s) of drinking water regulations.

Compliance Period	Analyte	Type
12/1/2020 - 12/31/2020	TURBIDITY	MONITORING, ROUTINE (IESWTR/LT1), MINOR

*** System-wide testing of representative homes for lead and copper (which may be imparted to the water from plumbing and fixtures) is conducted every three years, as required by the Environmental Protection Agency. The latest round of testing was conducted in 2019, with results presented here. The next round of testing will occur in 2022.*

VIOLATIONS AND HEALTH EFFECTS INFORMATION

PUBLIC NOTICE

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Springfield PWS Failed to Meet Turbidity Monitoring Requirement

Este informe contiene información muy importante sobre su agua potable.

Tradúzcalo o hable con alguien que lo entienda bien.

Springfield Public Water System (PWS) reported the failure to meet individual filter monitoring requirements for turbidity during December 2020. On December 13, 2020, there was a failure of the individual filter turbidity monitoring equipment at the Blackman Water Treatment Plant. Although Springfield PWS was able to fix the continuous monitoring equipment within five (5) working days and combined filter effluent turbidity measurements met turbidity standards during the event, Springfield PWS reported the failure to collect grab samples every four (4) hours from the affected filter(s) in violation of turbidity monitoring requirements as required by 10 CSR 60-4.050(2)(D)2.

What should I do?
There is nothing you need to do at this time. You may continue to drink the water. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. General guidelines on ways to lessen the risk of infection by microbes are available from U.S. Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791. If you have specific health concerns, consult your doctor.

What does this mean?
This is not an emergency. If it had been, you would have been notified within 24 hours. Turbidity is a measure of suspended particles in drinking water. While turbidity has no direct health effects, it can interfere with the disinfection process and may provide a medium for microbial growth. Turbidity may also indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

What happened? What is being done?
Springfield PWS monitors individual filter turbidity by continuously pumping water from each filter to a turbidity analyzer, called a turbidimeter. A motor failure on a sample pump resulted in the loss of adequate flow to a turbidimeter. Subsequently, the monitoring system was provided with a false reading from the analyzer. Because there was a lack of adequate data, there was a compliance failure in continuously monitoring individual filter turbidity. Based upon typical plant performance, water quality conditions surrounding the event, historical performance of filters, and a multitude of turbidity measurements downstream of these filters, Springfield PWS is confident that the water delivered surrounding this event was safe to drink and should cause no concern to their customers. Springfield PWS has since upgraded all individual filter turbidity analyzers so that adequate sample flow is continuously verified and maintained. Springfield PWS completed additional staff training to emphasize the importance of monitoring individual filter turbidities, the functionality of the new turbidity analyzers, the meaning of additional alarm parameters, and the standard operating procedures for filters. The quality of the water and safety to the customers is of the utmost importance to Springfield PWS, as they regularly maintain standards which exceed regulatory requirements.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

For more information, please contact:

Bob Wilson at 417-831-8880 or City Utilities of Springfield, Attn: Bob Wilson PO Box 551 Springfield, MO 65809

You may also contact the Missouri Department of Natural Resources Southwest Regional Office at 417-891-4300 or Public Drinking Water Branch at 573-526-6925.

This notice is being sent to you by Springfield PWS
State Public Water System
ID# MO5010754
Date of Notification: July 1, 2021

UNREGULATED CONTAMINANT MONITORING RULE RESULTS - 2019

UCMR4				
Detected Contaminants	Collection Date of HV	High Value (HV)	Range Detected	Unit
Bromide	08/20/19	39.5	27.7 - 39.5	ppb
HAA5	05/13/19	42.28	5 - 42.28	ppb
HAA6Br	08/20/19	19.88	6.1 - 19.88	ppb
HAA9	05/13/19	54.51	9.9 - 54.51	ppb
Manganese	02/04/19	0.53	0 - 0.53	ppb
Total Organic Carbon	05/13/19	3880	1070 - 3880	ppb

Unregulated contaminants do not have a maximum contaminant level (MCL) associated with their occurrence. Utilities are periodically required to sample for unregulated contaminants to assist EPA in determining if an MCL is needed for those contaminants. During the latest round of monitoring our utility tested for 30 contaminants - the 6 contaminants measured at detectable levels are listed in the table (ABOVE).

WHAT ARE THE SOURCES OF CONTAMINANTS?

As water travels over the land's surface or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can be polluted by animals or human activity. Contaminants that might be expected in untreated water include microbial contaminants, such as viruses and bacteria; inorganic contaminants, such as salts and metals; organic chemicals from pesticides, herbicides, and industrial or petroleum use; and radioactive materials. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the ENVIRONMENTAL PROTECTION AGENCY'S SAFE DRINKING WATER HOTLINE: 800-426-4791.

SOURCE WATER CONTAMINANT MONITORING RESULTS 2016

Analyte	Units	Average	Range	Comments	Major Sources
Cryptosporidium	oocysts/L	< 0.1	< 0.1 - 0.39	Detected in source waters only	Naturally present in the environment

WHAT IS CRYPTOSPORIDIUM?

Cryptosporidium is a microbial pathogen found in surface waters throughout much of the United States. *Cryptosporidium* may cause cryptosporidiosis, which is an abdominal infection with symptoms such as nausea, diarrhea, and abdominal cramps. Although filtration removes *Cryptosporidium*, the most commonly applied filtration methods cannot guarantee 100% removal. City Utilities has conducted monitoring of both our source waters and our finished drinking waters. Our monitoring efforts to date have detected *Cryptosporidium* only in our source waters, though the monitoring techniques cannot determine if the organisms are dead, or alive and infectious. *Cryptosporidium* must be ingested to cause disease and it may be spread through several means other than drinking water.

WATER AT A GLANCE
ABOUT LEAD AND COPPER

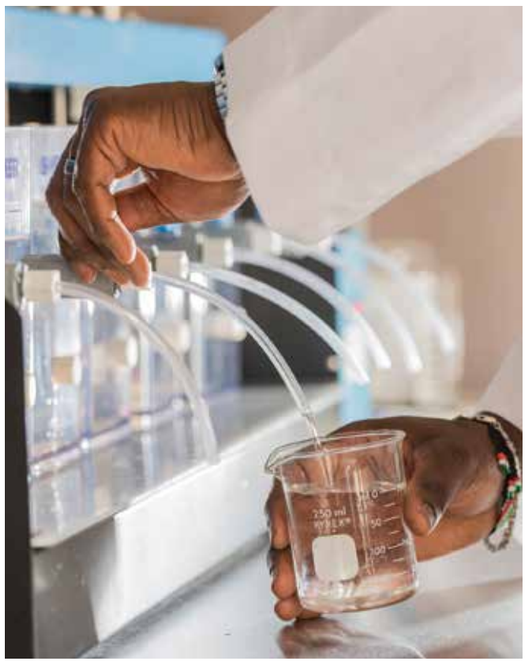
City Utilities fully complies with the lead and copper provisions of the Safe Drinking Water Act. In 2019, City Utilities gathered samples from a number of residences in accordance with state and federal regulations. EPA regulations require that at least 90 percent of the samples are below the action level for both lead (15 ppb) and copper (1.3 ppm). Of the 55 residences sampled in 2019, two of the results exceeded the action level for either lead or copper.

Special Lead and Copper Notice: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. CU is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791) or http://water.epa.gov/drink/info/lead/index.cfm.

SPECIAL HEALTH INFORMATION

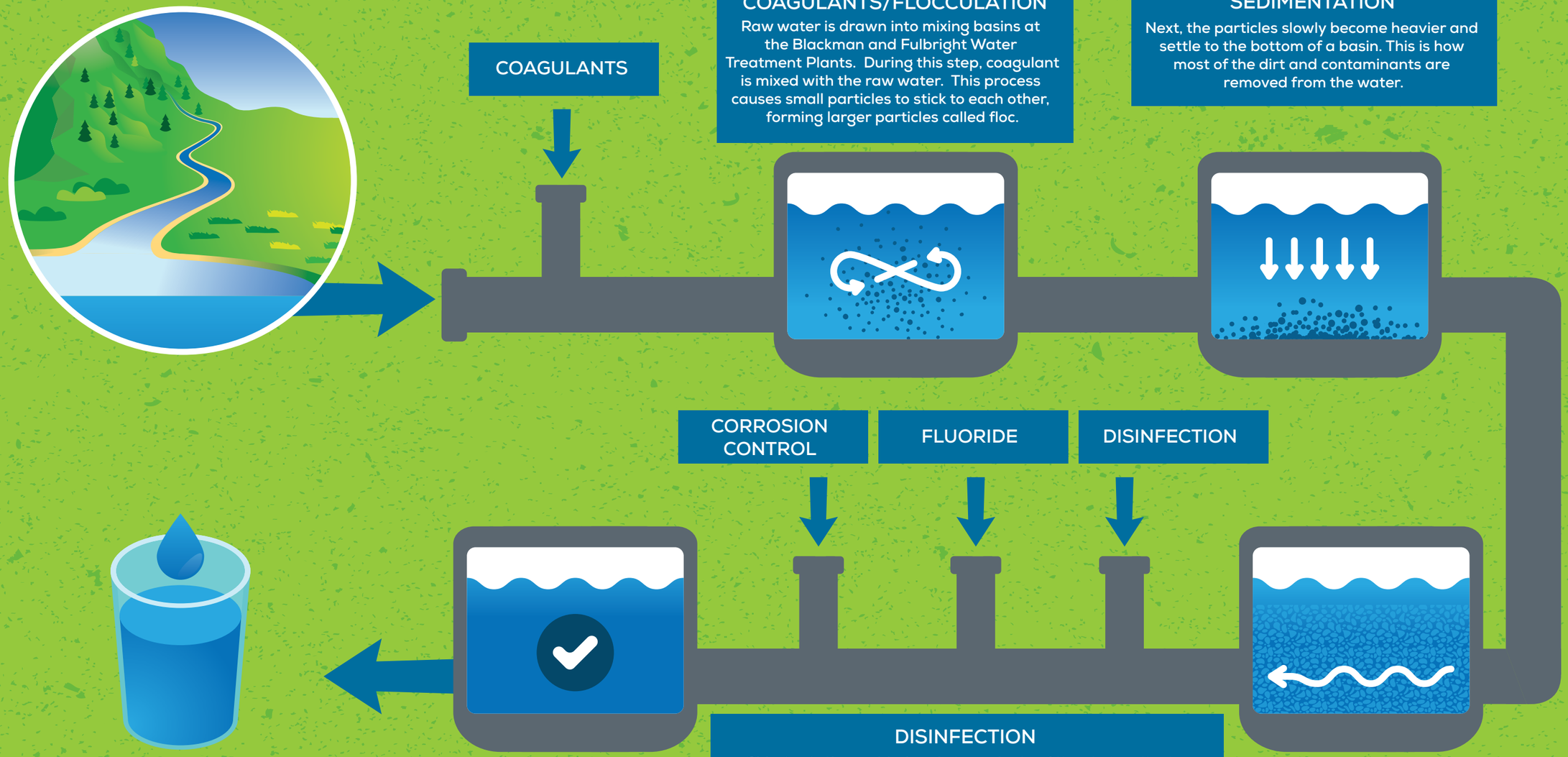
Some people may be more vulnerable to certain types of contamination in drinking water than the general population. Immuno-compromised individuals-people with cancer who are undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at risk for infections. These people should seek advice from their healthcare provider. Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA hotline listed below:

Environmental Protection Agency's Safe Drinking Water Hotline: 800-426-4791



HOW YOUR WATER IS TREATED

City Utilities takes great measures to keep your water clean and safe for you and your family to drink. This process takes place in four steps:



COAGULANTS/FLOCCULATION

Raw water is drawn into mixing basins at the Blackman and Fulbright Water Treatment Plants. During this step, coagulant is mixed with the raw water. This process causes small particles to stick to each other, forming larger particles called floc.

SEDIMENTATION

Next, the particles slowly become heavier and settle to the bottom of a basin. This is how most of the dirt and contaminants are removed from the water.

FILTRATION

To finish the clarifying of the water, it is then filtered through layers of fine, granulated materials consisting of carbon, sand, and rocks. As smaller particles are removed, cloudiness diminishes, and clear water emerges.

DISINFECTION

Chlorine is then added and given plenty of time to inactivate any bacteria, viruses, or other harmful microbes that might remain.

In addition, carbon is used to help the water taste great. While fluoride occurs naturally in water, a small amount is added to help protect oral health. Finally, the pH of the water is adjusted to protect pipes from corrosion. All these steps take place before the water goes into the distribution system, your home, or any business. City Utilities carefully monitors the quality of water during the treatment process and throughout the water system.

TREATED WATER STORAGE

WATER CONSUMPTION

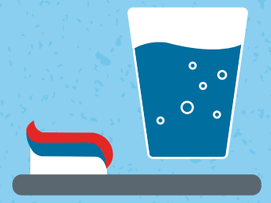
FIVE WAYS TO SAVE WATER

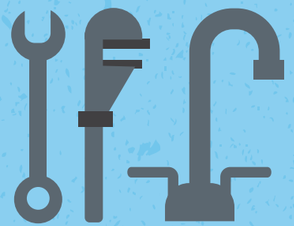
1

Limit your showers to five minutes or less.

2

Turn off the faucet when you are brushing your teeth and while washing your hands.





3

Inspect your faucets, toilets, and outdoor spigots for leaks.

4

Upgrade old toilets to WaterSense® high efficiency toilets and save more than two gallons of water per flush.

5

While you're waiting for the water to warm up, capture and repurpose it to water your garden or plants.

City Utilities offers a variety of rebates to help you save energy and money.

Visit cityutilities.net to see a complete list and get connected to savings today.

Water by the Numbers

EVEN or ODD WATERING SCHEDULE

City Utilities is committed to helping our customers use their water and energy wisely. With your help, Springfield may be able to save 5 million gallons of water every day with the Even-Odd Watering Schedule.

Lawns in our area typically need 1 to 1.5 inches of water per week to remain green. You can achieve this goal and help our community save water. If your house number ends in an even number, water only Wednesday, Friday, and Sunday. If your house ends with an odd number, water on Tuesday, Thursday, and Saturday. On Monday's, we will all take a break.

For more information about the Even-Odd watering program and how you can save water, call **417-874-8200** or visit **cityutilities.net**.

301 East Central, P.O. Box 551 • Springfield, Missouri 65801
cityutilities.net